



ENERGY POLICY UPDATE

January 13, 2015

The Energy Policy Update Electronic Newsletter is published by the Arizona Governor's Office Of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international, domestic energy, and environment-related publications that are reviewed by Community Outreach Personnel. For inquiries, call 602-771-1143 or toll free to 800-352-5499. To register to receive this newsletter electronically or to unsubscribe, email [Gloria Castro](#).

UPCOMING WEBINARS

✚ ENERGY STAR Webinars

✚ U.S. Dept. of Energy Tribal Renewable Energy Webinar Series

U.S. Dept. of Energy Webinars

✚ JANUARY 15: Design Conditions for the Hurricane Metocean Environment - Click [here](#) to register.

✚ January 21: [Wind Turbine Recycling and Repowering](#) – Click [here](#) to register or for more information.

✚ JANUARY 22: [Solar Program Overview](#) - Click [here](#) to register.

✚ JANUARY 28: [Transitioning to NERC CIPv5: What Does it Mean for Electric Utilities](#) - Click [here](#) to register.

✚ February 3: [How a New Energy Savings Performance Contracts are Improving Energy Efficiency in U.S. Buildings](#) – Click [here](#) to register.

2015 UPCOMING EVENTS

NAHB Int'l. Builders' Show
Jan. 20-22 Las Vegas, NV

ASHRAE Winter Conference
Jan. 24-28 Chicago, IL



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The Arizona Republic now has limited access. As such, links may or may not work.

ARIZONA-RELATED

[Being Prepared: Arizona Senate Bill Would Extend Funding For Nuclear Emergency Response](#) [Phoenix Business Journal, Jan. 7] Palo Verde Nuclear Power Plant west of Buckeye deploys a number of nuclear emergency safety and response programs and those programs cost money. The cost of the local deployment is being covered by an ongoing assessments against APS, Salt River Project and their partners to fund the Arizona, Maricopa County and Buckeye nuclear emergency management fund. Newly elected state Sen. John Kavanagh's first bill, Senate Bill 1001, seeks to continue the funding for those programs over the next two years. Kavanagh's bill locks in \$2.4 million for fiscal 2015-16 and \$2.41 million for the following fiscal year. It also continues funding for Maricopa County and Buckeye emergency services personnel and preparation. The county receives \$682,000 in fiscal 2015-16 and \$707,000 the following year. Buckeye collects about \$70,000 each of the two funded years.

[National Geothermal Data System Spun Off in New Non-Profit Company \(AGS\)](#) [Geothermal Resource Council website, Jan. 2] The [Arizona Geological Survey \(AGS\)](#) has spun off the [U.S. Geoscience Information Network \(USGIN\)](#) Foundation, Inc, this past year as an independent non-profit company to commercialize the technology and infrastructure of the [National Geothermal Data System \(NGDS\)](#) at the national and international level. The NGDS is the biggest client/application/product of USGIN and will continue to showcase as an example of what the NGDS can do and provide. USGIN provides training, software extensions and customization, node set-up, and development of data content models or interchange formats to add new data categories. The AGS are negotiating grants and contracts now for the start-up company which is helping make Arizona a world center in geoscience cyberinfrastructure.

[Phoenix Studies Southern Route for Expanding Light Rail](#)

[ABEX.com website, Jan. 9] A light-rail spur into south central Phoenix took a step toward reality when the Phoenix City Council authorized funding for an environmental review and conceptual engineering work. And extensions of the light rail in other directions are in various stages of

Getting to ZERO Nat'l. Forum

Feb. 1-3 Washington, DC

NASEO Energy Policy Outlook Conference 2015

Feb. 3-6 Washington, DC

Solar Power Generation USA

Feb. 4-5 San Diego, CA

Energy, Utility & Environment Conference (EUEC) 2015

Feb. 16-18 San Diego, CA

Sustainability Solutions Festival

Feb. 16-21

GreenBiz 2015

Feb. 17-19 Phoenix, AZ

GreenBiz Forum 2015

Feb. 17-19 Phoenix, AZ

2015 Sustainability Solution Festival

Feb. 17-22 Phoenix, AZ

Natural Gas Vehicles + Infrastructure

Mar. 10-11 Phoenix, AZ

GLOBALCON Conference & Expo

Mar. 17-18 Philadelphia, PA

Arizona Science & Engineering Fair

Apr. 7-9 Phoenix, AZ

Solar Summit 2015

Apr. 14-15 Phoenix, AZ

Utility Solar Conference

Apr. 27-29 San Diego, CA

CxENERGY 2015 Conference & Expo

Apr. 27-30 Las Vegas, NV

Alternative Clean Transportation (ACT) Expo

May 4-7 Dallas, TX

Solar Power Generation Mexico

May 19-20

World Trade Center, Mexico

Energy Efficiency Finance Forum

May 31-Jun. 2 San Francisco, CA

West Coast Energy Management Congress (EMC)

Jun. 3-4 Long Beach, CA

progress as well. The council's action on Jan. 7 on the south central extension allows the city to enter into an agreement with Valley Metro, which will lead a study expected to take 18 to 24 months. The council also authorized the City Controller to disburse up to \$3.2M for the study. In 2014, the city and Valley Metro received \$1.6M Transportation Investment Generating Economic Recovery (TIGER) grant from the U.S. Department of Transportation. A local match of \$1.6M brings the total to \$3.2M to complete this phase of the project. The light rail extension of nearly five miles would run down Central Avenue from downtown Phoenix to Baseline Road.

SRP's Proposed Solar Rate Hikes Draw Ire

[Arizona Republic, Jan. 11] Salt River Project customers, particularly those with solar panels on their homes, are battling the utility over its plan to raise solar customers' rates \$50 or more a month. SRP's rationale behind the proposal is similar to the stance taken by many other utilities across the country: Solar customers are not paying their fair share of maintaining the power grid because they don't buy much electricity, and the cost of power lines and power plants is partially rolled into those electricity costs. Renewable-energy advocates counter that utilities are not giving solar enough credit for reducing pollution and water use, and its other environmentally favorable attributes. More than 15,000 SRP customers already have had solar panels installed. Hundreds of those who own or lease solar, and many who hope to, are protesting the increases, saying that the dramatic shift in rates is a calculated move to protect the company's revenue stream. "I think you guys should be replaced!" retired Arizona State University electrical-engineering professor Joseph Hui shouted at SRP's elected leaders during a community meeting on the solar plan Thursday. SRP managers, who proposed the plan for the utility's elected officials to vote on, calmly answered questions from the often-raucous crowd. "We are trying to balance competing interests," said John Tucker, SRP manager of pricing design. Most solar customers send their excess power to the grid during the daytime, getting a one-for-one credit from the utility. In the evening, when their panels are not making power, those customers draw power from the utility, which is supplied by gas, coal and nuclear plants across the region. Solar customers pay much less for this service because of the credit they accumulate during the daytime. Utilities say that is a lopsided deal because they could buy power for less than they pay solar customers for their excess. Arizona Public Service Co. proposed similar fees in 2013, only to have state regulators pare them back to about \$5 a month for new solar customers only, allowing those who had already installed solar to escape the fees. Regulators in Wisconsin voted in November to allow the utility We Energies to raise rates on solar customers, but not as dramatically as SRP proposes.

Tempe Lab Helps Break Electricity World Record

[Arizona Republic, Jan. 10] In a research facility off the Loop 101 in Tempe, about 30 researchers in clean rooms wearing protective suits, gloves and hair nets test some of the most efficient semiconductor materials on the planet for solar panels and LEDs. They must be doing something right at Soitec Phoenix Labs. In December, Soitec and partners in France and Germany announced breaking the world record for a solar cell converting sunlight to electricity. The cell was certified to have a conversion rate of 46 percent. That is about double the efficiency of most common solar cells that use a single semiconductor material to convert sunlight to electricity. Soitec makes "multijunction" solar cells that use more than one semiconductor material. The next best multijunction cells have been certified to an efficiency of a little over 40 percent, but Soitec officials believe they are on the verge of reaching 50 percent efficiency.

Website Shines Light on Renewable Energy Resources

A team from the University of Arizona and eight Southwestern electric utility companies has built a pioneering web portal that provides insight into renewable energy sources and how they contribute to the region's electricity grid.

[UA News, Dec. 17] University of Arizona researchers and a group of partners have developed a tool that will help utility companies better understand the long-term impact of renewable energy on the power grid and provide insight on how to integrate these resources in the future in the most cost-efficient and reliable way for consumers. The tool — a web portal — gathers, analyzes and displays real-time data from eight Southwestern utility companies, painting a broad picture of energy sources and use across the region. The information will help companies determine what actions to take for backup power planning over the next several years as the percentage of renewable energy usage grows. By 2025, Arizona utility companies are required to generate 15 percent of their energy from the sun, wind, biogas, biomass, geothermal and other renewable resources. But the power generated by some of these renewable resources is variable. For instance, a cloudy day will change the amount of power generated by a solar array, a stormy day could generate more wind power, and solar generation drops completely at night —right about the time when customers turn on their lights, increasing energy demand. By using this tool to obtain a deeper understanding of these opportunities and challenges, utility companies will be

14th Annual Small Business
Forum & Expo
Jun. 16-18 Phoenix, AZ

ASHRAE Annual Conference
Jun. 27-Jul.1 Atlanta, GA

RES Las Vegas
Mar. 9-12 Las Vegas, NV

ACEEE Summer Study on
Energy Efficiency in Industry
Aug. 4-6 Buffalo, NY

Solar Power Int'l. 2015
Sep. 14-17 Anaheim, CA

ACEEE National Conference on
Energy Efficiency as a Resource
Sep. 20-22 Little Rock, AR

World Energy Engineering
Congress (WEEC)
Sep. 30-Oct. 2 2015
Orlando, FL

ASU Sustainability Series Events

Green Building Lecture Series
Scottsdale, AZ

able to provide customers with a more reliable and efficient power grid, even as variable resources become a larger percentage of the overall power generated.

ALTERNATIVE ENERGY & EFFICIENCY

Americans Buy Fewer Electric Cars As Green Fuels Takes a Hit

Makers of biodiesel, a fuel made from vegetable oil or animal fats, are slashing prices and margins in a bid to stay competitive with the price of diesel fuel

[The Guardian, Jan. 9] With gas prices lingering near their lowest levels in five years, cleaner alternative fuels are taking a hit. Makers of biodiesel, a fuel made from vegetable oil or animal fats, are slashing prices and margins in a bid to stay competitive with the price of diesel fuel, which is down more than 20% from a year ago. Shippers are delaying purchases of trucks that run on natural gas, and sales of electric vehicles are down, while demand for less fuel-efficient SUVs is up. Wall Street is also punishing the sector. The WilderHill Clean Energy index, which tracks everything from renewable power producers to solar panel makers, is down 36% after hitting a three-year high last March.

China Leads 16% Jump in Global Clean Energy Investments; Solar, Wind Sectors Grow

[International Business Times, Jan. 9] Clean energy investment is rising again after three years of steady declines in the sector. The world spent \$310 billion last year on solar and wind power, electric cars and energy efficiency and storage, up 16 percent from the previous year, according to Bloomberg New Energy Finance. China led the spending surge, accounting for more than a fourth of the global total. Chinese investment jumped by 32 percent, to \$89.5 billion, thanks to heavy government spending on its solar and wind power sectors, part of a broader effort to diversify China's energy supplies and reduce pollution from coal-fired power plants. The government aims to get 11.4 percent of its electricity from renewable supplies by the end of this year, a target China seems on track to meet. U.S. investment rose 8 percent, to \$51.8 billion, the highest boost since 2012. In Europe, where debt-saddled governments have begun slashing incentives for renewable energy projects, investment grew only 1 percent, to \$66 billion.

Could Wave Energy Be Cheaper, Easier To Integrate Than Solar and Wind?

[Smart Grid News, Jan. 8] Mention the phrase 'alternative energy sources' and wave energy isn't top of mind for most people. There are more than 100 wave energy concepts, but only a handful have become prototypes and been tested. And some of those have failed. A report from a collaboration of academia and private industry, however, says wave energy would not be as intermittent as wind and solar and would be easier to integrate into the electric grid. The collaboration between Oregon State University (OSU), Canada's University of Victoria, and industry asserts that while wave energy is still very much in its infancy and not in use for energy production in the Pacific Northwest, it deserves consideration and further development because of its potential. One problem with intermittent energy sources like wind and solar is that when they are not generating power, another source of energy needs to make up the difference -- a condition that adds to the overall cost of providing electricity.

Data Centers Slash Energy Usage

Modern data centers use open and green tech to respond faster to customer needs while cutting 40% of electricity use.

[InformationWeek.com, Jan. 6] We've become accustomed to watching the rapid evolution of components that go into networking, computing, and storage. Advances in components and much more helped data centers become one of the fastest-evolving areas in 2014. Power supply and distribution, cooling, and new cloud-oriented server design for data centers have all contributed to the advances. Google, Amazon, Facebook, and Microsoft have previously been acknowledged as innovators in new, cloud-oriented data center design. But last year, conventional enterprises joined in the innovation implementation. From Fidelity Investment's discrete, one-megawatt-room Centercore data center design to eBay's off-the-grid, self-reliant approach, data centers are now taking forms that are giant steps ahead of their predecessors. In September, Fidelity opened its second [Centercore implementation](#) after introducing a 500-megawatt proof-of-concept in Raleigh, Va. The modules, or steel rooms, can be attached horizontally or stacked vertically, unlike their shipping container predecessors. Adding a just-in-time "core" unit expands the data center by the amount needed, eliminating the need to overbuild for many years ahead. Fidelity's Centercore design balances compute, networking, and storage in proportions that meet Fidelity's needs, and that's a key element of the new design: It aims to leave no space or available electrical power unused. VP of data centers Eric Wells explained that in older data centers, "we found a lot of stranded power and IT capacity, where the infrastructure couldn't take full advantage of the resources available to it because of a crowding together of the

wrong mix of elements." More efficient use of combined resources will lead to an expected 40% savings in electricity, even though the new data center will rely on chillers when necessary, an energy-hungry element eschewed in Facebook's most recent facilities.

[Green Buildings Cost 20% Less to Maintain](#)

[SustainableBusiness.com News, Jan. 8] One of the many advantages of green buildings is that they cost less to operate, and now a study confirms how that's benefiting the federal government and taxpayers. The US General Services Administration (GSA) and Pacific Northwest National Lab examined a year of data for 22 LEED-certified federal buildings across the country and found they cost 19% less to maintain than conventional buildings. They also found the buildings consume 25% less energy and water, produce 36% less carbon emissions, and have a 27% higher rate of occupant satisfaction. These savings have been achieved regardless of building size and green features, which include radiant air distribution, irrigation rain sensors, variable speed drives, vegetated or reflective roofs, PV panels, and energy-efficient elevators, according to Buildings.com. Will this hold true for certified buildings under the industry-friendly Green Globes? In 2013, GSA changed its longstanding requirement that LEED certification be used for federal government buildings, [giving equal footing to Green Globes](#).

ENERGY/GENERAL

[Clean Energy Banks Could Foster Private Investment](#)

[Energy Manager Today, Jan. 6] The [electric vehicle \(EV\) market](#) got a jolt of good news this fall with the [announcement](#) that dozens of non-profits, schools, and utilities are purchasing electric fleets and installing workplace charging stations. The challenge is to encourage more fleet operators – and the general public — to adopt EVs on a similar scale. And that's not likely without more charging stations that the public can use. [Governments](#) have played a central role in deploying the public EV charging infrastructure we now have, but private investment is needed to get more charging along major highways and at popular destinations, multi-unit residential buildings and workplaces. A [new C2ES report](#) explores the role that state clean energy financing organizations, such as clean energy banks, can play in unlocking private investment to expand EV infrastructure. (The analysis is part of a [joint project](#) by us and the [National Association of State Energy Officials](#) on ways to finance alternative fuel vehicle refueling infrastructure.)

[Electricity Prices Drop in Mexico](#)

[Electric Light & Power, Jan. 6] One of the promises of Mexico's energy reform, the pledge to bring down electricity prices for consumers, appears closer to being achieved, with a 2 percent reduction applied. Electricity prices in Mexico are around 30 percent higher than in the US, according to the employers' federation Coparmex. The finance ministry announced a 2 percent cut in prices for domestic consumers on January 1 in anticipation of lower generation costs as a result of an extension of the natural gas pipeline network, according to Business News Americas. "The energy reform will gradually increase the supply of natural gas for electricity generation, with the construction of new pipelines, which will allow for a consistent reduction in electricity tariffs," the Shcp said in a press release. "As a result, electricity prices for domestic consumers were lowered by 2 percent on January 1, in comparison with the annual 4 percent increases seen in previous years and 0.33 percent monthly increases." Electricity prices have long been a source of complaint among consumers — residential, commercial and industrial alike — while state utility CFE has endured a long battle over unpaid bills that swell its debt burden. In December, the country's agency for information transparency called on CFE to reveal its 100 largest debtors and the amount they owe. Mexico aims to double its electricity generation capacity over the next 15 years and achieve 100 percent supply, which is expected to create 2.5 million jobs by 2025. CFE in August announced 16 infrastructure projects valued at nearly \$5 billion that include natural gas pipelines, three co-generation plants, the refitting of a thermoelectric plant, three transmission lines and five contracts aimed at upgrading the country's electricity distribution grid.

[U.K. Power Grid Is Under Attack from Hackers Every Minute, Says Parliament](#)

[Bloomberg, Jan. 9] Commercial buildings are seen illuminated at night in the Canary Wharf business and financial district in London, U.K. Britain's electricity transmission network is constantly subject to cyber-attack and threats to infrastructure will remain high over the next few months, the nation's Computer Emergency Response Team statistics show. The U.K. government is one step ahead of hackers trying to turn off the country's lights -- for now. The prospect of cyber-attacks on the nation's power network is a major threat to the country's security, according to James Arbuthnot, a member of parliament who chaired the Defense Select Committee until last year. He plans to visit National Grid Plc (NG/) next month to discuss the issue. "Our National Grid is coming under cyber-attack not just day-by-day but minute-by-minute," Arbuthnot, whose committee scrutinized the country's security policy, told a conference in

London last year. "There are, at National Grid, people of very high quality who recognize the risks that these attacks pose, and who are fighting them off," he said, "but we can't expect them to win forever." Britain's electricity transmission network is constantly subject to cyber-attack and threats to infrastructure will remain high over the next few months, the nation's Computer Emergency Response Team statistics show. More resources are being funneled towards combating the attempted intrusions: the Cabinet Office said on Dec. 12 it is increasing spending on its cyber-security program to 860 million pounds (\$1.3 billion) from an original 650 million pounds planned over four years from 2011. Cyber-attacks on critical infrastructure are an increasing threat across the globe, according to Moscow-based security firm Kaspersky Lab, which advises governments and businesses. Revelations of an oil pipeline explosion in Turkey orchestrated by computer in 2008 and the attack on Sony Pictures Entertainment demonstrate the increasing ability of hackers to penetrate IT systems. An attack on the grid would be uniquely destructive since the economy would cease to function without it, Arbutnot said.

[Oil Producers Betting on Price Drop with OPEC Not Curbing Output](#)

[Bloomberg, Jan. 12] The oil industry was listening as OPEC talked down crude prices to a more than five-year low. Drillers, refiners and other merchants increased bets on lower prices to the most in three years in the week ended Jan. 6, government data show. Producers idled the most rigs since 1991, with some paying to break leases on drilling equipment. Companies are hedging more and drilling less amid concern that the biggest slump in prices since 2008 will continue. Oil dropped for a seventh week after officials from Saudi Arabia, the United Arab Emirates and Kuwait reiterated they won't curb output to halt the decline.

[U.S. Drivers Start 2015 with Cheapest Gas in Six Years](#)

[Bloomberg, Jan. 12] Bloomberg's Isaac Arnsdorf and Scarlet Fu examine the oil price projection from Goldman Sachs. They speak in "On The Markets" on "In The Loop." Drivers paid an average of \$2.2021 a gallon for regular gasoline at U.S. pumps last week, the lowest level for this time of year since 2009, according to Lundberg Survey Inc. Prices dropped 26.92 cents in the three-week period to Jan. 9 and are \$1.14 a gallon below year-ago levels, according to the survey, which is based on information obtained at about 2,500 filling stations by the Camarillo, California-based company. Retail gasoline fell after crude [oil prices](#) dropped below \$50 for the first time since 2009 as OPEC members said they wouldn't reduce output to bolster prices that have dropped by more than half since June. U.S. stockpiles of gasoline at 237 million barrels were the highest since 2011 in the week ended Jan. 2, according to government data. Refineries across the nation ran at nearly 94 percent of operable capacity.

[U.S. Oil Producers Cut Rigs as Price Declines](#)

[New York Times, Jan. 7] HOUSTON — With oil prices plunging at an ever-quicken rate, producers are beginning to slash the number of drilling rigs around the country. The national rig count had remained surprisingly resilient over recent months even as oil prices dropped by more than 50 percent since June, and it still tops the count of a year ago as domestic production continues to surge. But an announcement on Wednesday by Helmerich & Payne, the giant contract rig company, that it planned to idle up to 50 rigs over the next month sent shudders through the industry. And that came on top of 11 rigs that it has already mothballed, meaning that in just a few weeks, its shale drilling activity will be reduced by about 20 percent.

INDUSTRIES AND TECHNOLOGIES

[Chevy Bolt Electric Car Targets Tesla with Low Price, Long Range](#)

[LA Times, Jan. 12] General Motors on Monday unveiled its battery-powered Chevrolet Bolt, challenging Tesla in the race to produce an affordable electric car. The Bolt concept car made its debut at the North American International Auto Show in Detroit, alongside a redesigned 2016 Volt, the second generation of Chevrolet's pioneering plug-in hybrid. The all-electric Bolt boasts a groundbreaking combination of low price and long driving range. It will sell in the low \$30,000s, after government incentives, and travel up to 200 miles on a battery charge, Mark Reuss, GM's executive vice president for global product development, said in an interview with The Times.

[DOE Carbon Capture Project Stores One Million Tons of Carbon Dioxide](#)

[Electric Light & Power, Jan. 8] The Department of Energy said its Illinois Basin-Decatur Project successfully captured and stored one million metric tons of carbon dioxide (CO2) and injected it into a deep saline formation. The project is part of the development phase of the DOE's Regional Carbon Sequestration Partnerships initiative, which is helping develop and deploy carbon capture and storage (CCS) technologies across the country, and continuing the United States on a path towards a low carbon future. "This milestone is an important step towards the widespread deployment of carbon capture technologies in real-world settings," said Energy Secretary Ernest

Moniz. “The successful testing of these technologies and the lessons learned support a range of industries in the region, while also reducing the amount of emissions in the atmosphere and protecting the planet at the same time.” The carbon dioxide is captured from the Archer Daniels Midland Co. ethanol-production facility in Decatur, Illinois, and is compressed before traveling across a mile-long pipeline and injected about 7,000 feet below the surface into the Mount Simon Sandstone formation.

[Drive-By Heat Mapping](#)

Startup’s thermal-imaging cars can quickly track energy leaks in thousands of homes and buildings.

[MIT News, Jan. 5] In 2007, Google unleashed a fleet of cars with roof-mounted cameras to provide street-level images of roads around the world. Now MIT spinout Essess is bringing similar “drive-by” innovations to energy efficiency in homes and businesses. The startup deploys cars with thermal-imaging rooftop rigs that create heat maps of thousands of homes and buildings per hour, detecting fixable leaks in “building envelopes” — windows, doors, walls, and foundations — to help owners curb energy loss. About the size of a large backpack, Essess’ rig includes several long-wave infrared radiometric cameras and near-infrared cameras. These cameras capture heat signatures, while a LiDAR system captures 3-D images to discern building facades from the physical environment. An onboard control system has software to track the route and manage the cameras. On the software side, computer vision and machine-learning algorithms stitch together the images, extract features, and filter out background objects. In one night, the cars can generate more than 3 terabytes of data, which is downloaded to an onboard system and processed at the startup’s Boston headquarters. Combining those heat maps with novel analytics, Essess shows utilities companies which households leak the most energy and, among those, which owners are most likely to make fixes, so they know where to direct energy-efficiency spending. This may include sending customers the thermal images of their homes along with information on the fixes that could offer the most return on investment. But the startup also works with the U.S. Department of Defense to help identify energy-wasting buildings on their bases. And schools, municipalities, oil refineries, and other organizations have hired Essess to scan their facilities and find, for instance, fixes that might affect their heating bills in the winter, have a short payback period, or are within a certain budget. Essess’ analytics can answer those questions, as well.

[Garbage Incinerators Make Comeback, Kindling Both Garbage and Debate](#)

[New York Times, Jan. 11] West Palm Beach, FL — Rising from a denuded landscape not far from this area’s famed beaches, the nation’s first new commercial garbage incinerator in 20 years is about to be fired up, ready to blast up to 3,000 tons of trash a day into electricity for thousands of houses. With landfills shunned, recycling programs stalled and the country’s record-setting trash output unyielding, new [waste-to-energy](#) plants are being eyed as a path to salvation. Facilities similar to the \$670 million incinerator here, common in Europe, are under consideration in Massachusetts, Nevada, Virginia, Wisconsin and elsewhere. Americans produce 4.4 pounds of [trash](#) per person per day, the most in the world, and the talk of returning to incineration, industry experts say, is an acknowledgment of defeat in the effort to reduce output and step up recycling. “People said 30 years ago there wouldn’t be a need to have waste-to-energy sites,” said Ted Michaels, president of the Energy Recovery Council, a trade association, recalling optimism over garbage reduction and vast increases in recycling. Today, few other options are available. But while the Environmental Protection Agency has given its seal of approval by classifying the new plants as renewable energy — akin to solar and wind power — the facilities are an expensive and perhaps risky gamble. Environmental groups oppose them, saying that although cleaner than the incinerators of the past, waste-to-energy plants still emit mercury, lead, dioxins and a variety of other toxic substances. And the history of incineration offers a cautionary tale, producing alarm among some who live nearby.

[Innovation in Transportation](#)

U.S. transportation secretary discusses “infrastructure deficit,” need for long-term innovation and planning.

[MIT News, Jan. 6] U.S. Secretary of Transportation Anthony Foxx warned, in remarks at an MIT forum on Monday, that America’s “infrastructure deficit” was growing and would worsen without further investment and long-term planning for new technologies. “Whatever the infrastructure deficit is on paper, it’s probably a multiple of that when you take into account the projects that are not being planned right now because of uncertainty about funding and other aspects of our transportation system,” Foxx told a capacity audience in MIT’s Wong Auditorium. Foxx emphasized his department’s ongoing work on a 30-year plan focused on the future of transportation in America. He also spoke about a broad range of areas in which technology and innovation can provide economic growth and social benefits, including freight hubs and logistics;

high-speed rail; air-safety systems; and auto technologies, including vehicle-to-vehicle safety technology and possibly autonomous vehicles. "There's a lot of [new] technology that's out there right now," said Foxx, who as the mayor of Charlotte, N.C., earned a reputation for forward-looking transportation policies. "The challenge is to figure out how to integrate it as quickly and as safely as we can."

LEGISLATION AND REGULATION

[Big Oil Bullish Despite Drop in Crude Prices, Keystone Veto Threat](#)

[Washington Bureau, Jan. 6] Cheap crude oil prices are a temporary phenomenon, and the Keystone XL pipeline will be approved this year. Those are the two big takeaways from the American Petroleum Institute's "State of American Energy" event in Washington, D.C., Tuesday. They're pretty optimistic predictions given what was happening elsewhere Tuesday. Crude oil prices continued to plummet, with West Texas Intermediate at one point falling to \$47.55, its [lowest level in more than five years](#). Plus, the White House said President [Barack Obama](#) would [veto legislation approving the Keystone XL pipeline](#), which would transport tar sands oil from Canada to Gulf Coast refineries. Both the House and the Senate are expected to pass the bill this month. But API President and CEO [Jack Gerard](#) remains bullish about the prospects for American's oil and natural gas industries. Since last year's "State of American Energy" address, crude oil prices have fallen by more than 50 percent. That's because, for now, the supply of oil exceeds global demand. But Gerard expects demand to grow as the U.S. economic recovery gains steam, and Europe and China get out of their funks. Gerard declined to speculate when the price of crude oil will begin to rebound, but he's confident it will.

[DOE Preparing Voluntary Code of Conduct for Consumer Data Privacy](#)

[Smart Grid News, Jan. 8] Efforts to modernize the U.S. electricity network with a variety of smart grid technologies are bringing about a secure, sustainable and reliable electric grid and a number of benefits for consumers, among them the ability to keep track of and control their energy use for savings on their electric bills. But one stubborn problem has yet to be satisfactorily addressed: how to ensure the privacy of customers' energy use data. That one issue may be the largest complaint about smart grid technologies now that smart meters are capable of generating massive amounts of data that help the smart grid run. And that includes information about customers. Privacy advocates and others have warned that smart meter data could be used to spy on customers and determine when they are home -- among other alarming allegations. A few years ago, the Department of Energy's (DOE) Office of Electricity and Energy Reliability, the Smart Grid Task Force and other government agencies undertook developing what is referred to as a Voluntary Code of Conduct (VCC), a series of guidelines for utilities and others working with customer energy use data to ensure customer privacy.

[EPA To Impose Plan To Cut Power Plant Emissions on States That Balk at Rule](#)

[Washington Bureau, Jan. 7] The Environmental Protection Agency sent a message Wednesday to states that don't want to develop plans to reduce carbon emissions at power plants: If you don't come up with your own way to do this, we'll implement one for you. EPA has issued a [proposed regulation](#) that would require electric utilities to reduce carbon emissions by 30 percent from 2005 levels by 2030. The agency will issue a final rule for existing power plants in mid-summer, according to [Janet McCabe](#), acting assistant administrator for EPA's office of air and radiation. Rules for new and modified power plants will be issued at the same time. The EPA's proposed rule for existing power plants gives states flexibility on how to meet the agency's carbon reduction goals. To help states develop their plans, the EPA also will issue a model plan in mid-summer.

[Mexico Seeks Crude Oil Swap with US](#)

[The Hill, Jan. 9] Mexico's state oil company is proposing a historic swap of millions of barrels of oil with the United States. Pemex said Thursday it wants to bring in as much as 100,000 barrels of crude oil and lightly processed oil known as condensates, to mix with its heavier crudes and use in domestic refineries, Reuters [reported](#). It would mark a shift from decades of Mexican self-sufficiency on oil. If United States officials agree, it would break the 40-year ban on oil exports. In return, Mexico would provide the United States with the heavier crude that domestic refineries have been built to handle, Reuters said. Mexico was recently the 10th largest producer of crude, but Pemex's output fell to historic lows last year. Meanwhile, the United States became the biggest producer of oil last year thanks to its shale boom. Pemex is still negotiating the deal with the United States, which has confirmed that it is communicating with Mexico on the matter. It also does not represent an increase in Mexican oil shipments, Pemex said.

[Oil Taxes Tempt Recession-Scarred U.S. States As Prices Plummet](#)

[Bloomberg News, Jan. 8] Columbus, OHIO — U.S. states are renewing efforts to pass taxes on

oil and gas extraction and, while falling energy prices may please consumers, drillers say it's the wrong time to raise their costs. At least 17 states last year considered imposing or amending so-called severance taxes, which generated more than \$16 billion in 2013 in the U.S. Many are expected to introduce similar bills this year, according to the National Conference of State Legislatures in Denver. Ohio Gov. John Kasich plans to seek a higher levy on drillers to offset an income-tax cut after opposition from the industry and lawmakers in his own Republican Party frustrated past attempts. Democratic Gov.-elect Tom Wolf in Pennsylvania wants a severance tax to fund education and infrastructure. Billionaire environmentalist Tom Steyer is leading a push for a California production tax to raise as much as \$2 billion a year. The price of oil dropped almost 50 percent in 2014 and fell to a five-year low of less than \$50 a barrel this week, which drillers say is prompting them to reduce spending and production plans. While the industry says higher taxes would worsen the situation, governors say energy companies can pay more for the natural resources they extract.

WESTERN POWER

California Roadmap Paves Way for Energy Storage Technology

[Electric Light & Power, Jan. 8] California Independent System Operator ([California ISO](#)), the California Public Utilities Commission ([CPUC](#)) and the California Energy Commission unveiled a comprehensive roadmap to assess the current market environment and regulatory policies for connecting new energy storage technology to the state's power grid. California, a national leader in advancing [energy storage](#), envisions this technology as a critical component in reducing global warming, improving air quality and promoting energy independence. The state currently has several pilot projects, and is working toward commercialization of energy storage. "The roadmap is a foundation to integrate energy storage technologies that benefits grid reliability and consumers throughout the West," said ISO CEO Steve Berberich. "This document details specific actions needed to optimize this exciting technology." [California](#) already established itself as an early advocate of energy storage technology when in 2013, the state mandated that investor-owned utilities reach a combined target of 1,325 MW of energy storage to be online by 2024.

In Southern Oregon, A \$200M Project To Turn Forestry Waste Into Jet Fuel

[Portland Business Journal, Jan. 12] [Red Rock Biofuels](#), based in Fort Collins, Colorado, is investing \$200 million in a biofuel refinery in the rural city of Lakeview, about 95 miles east of Klamath Falls in Southern Oregon. [Jeff Manternach](#), the Portland-based co-founder and CFO of Red Rock, highlighted plans for the ambitious project in December during the annual Oregon Leadership Summit. Attendees devoted a great deal of energy to discussing initiatives to boost rural economies like Lakeview's, including through the development of alternative energy projects. Manternach's timing was fortuitous. Just last week, Environmental Entrepreneurs (E2) issued its annual [Advanced Biofuel Market Report](#), noting that U.S. biorefining capacity has [doubled since 2007](#) and will double again by 2017.

Santa Fe Hotel Powers Guest Rooms with Solar

[Associated Press, Jan. 12] Santa Fe, N.M. – A Santa Fe hotel is now powering its guest rooms with sunshine. Guest rooms at the Hotel Santa Fe The Hacienda and Spa are now 100 percent solar-powered as part of an effort by the hotel and Stay.Solar, a new company looking to bring solar power to the hotel industry. Despite New Mexico's abundance of sunshine, there are no solar panels on the roof of the hotel. Instead, the electricity is produced at large-scale solar installations elsewhere and is delivered to the hotel by smart-grid technology.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

- **INCENTIVES**

Arizona has lowered taxes, streamlined regulations, and established a suite of incentives to support corporate growth and expansion. The Arizona Competitiveness Package, groundbreaking legislation adopted in 2011, makes it easier for existing Arizona companies to prosper and establishes Arizona as one of the most desirable places for expanding companies to do business. Give your company a competitive edge by utilizing Arizona's incentives.

- [Job Training](#)
- [Quality Jobs](#)
- [Qualified Facility](#)

- [Computer Data Center Program](#)
- [Research & Development](#)
- [Foreign Trade Zone](#)
- [Military Reuse Zone](#)
- [Angel Investment](#)
- [Renewable Energy Tax Incentive](#)
- [Healthy Forest](#)
- [Sales Tax Exemption for Machinery and Equipment](#)
- [Lease Excise](#)
- [Additional Depreciation](#)
- [Work Opportunity](#)
- [Commercial/Industrial Solar](#)
- [SBIR/STTR](#)
- [Private Activity Bonds](#)
- [QECB's](#)

- **(ACA) PROGRAMS**

- **DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY (DSIRE)**

- [Arizona Incentives/Policies](#)
- [Federal Incentives/Policies](#)
- [Solar Policy News](#)

DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- [Solid-State Lighting Advanced Technology Research and Development 2015](#)
Close Date: 01/15/2015
- [Advancing Solutions to Improve the Energy Efficiency of U.S. Commercial Buildings](#)
Close Date: 01/20/2015
- [Micro-scale Optimized Solar-cell Arrays with Integrated Concentration \(MOSIAC\) \(DE-FOA-0001256\)](#) – Concept Paper due January 22, 2015
- **DUE SOON!** [WaterSMART: Water and Energy Efficiency \(R15AS00002\)](#) – Application due January 23, 2015
- [Wood Innovations Programs \(USDA-FS-WERC-2015\)](#) – Application Due Date: January 23, 2015
- [Wood Innovations](#) Close Date: 1/23/2015
- **NEW!** [Water Conservation Field Services Program \(R15AS00025\)](#) – Applications due January 26, 2015
- [Buildings University Innovators & Leaders Development \(BUILD\) – 2015](#) Funding Opportunity #:DE-FOA-0001167 – Concept Papers due December 19, 2014
Close Date: 1/28/2015
- [Notice of Intent: State Energy Program 2015 Competitive Awards](#)
- [Environmental Workforce Development And Job Training \(EWDJT\) Grants \(EPA-OSWER-OBLR-15-01\)](#) – Application Due Date: February 3, 2015

- [Building America Industry Partnerships for High Performance Housing Innovation Funding Opportunity #DE-FOA-0001117](#) Close Date: 02/04/2015
- [Choice Neighborhoods Implementation Grant Program \(FR-5800-N-11\)](#) – Application Due Date: February 9, 2015
- [Buildings University Innovators and Leaders Development \(BUILD\) - 2015](#) – Close Date 02/11/2014
- [Powering Agriculture: An Energy Grand Challenge for Development \(AID-SOL-OOA-00005\)](#) – Applications accepted between December 8, 2014 through February 12, 2015
- **NEW!** [Advanced Research in Dry-Cooling \(ARID\) \(DE-FOA-0001197\)](#) – Applications due February 13, 2015
- [Infrastructure Management and Extreme Events \(PD-15-1638\)](#) – Application Due Date: February 17, 2015
- **NEW!** [National Institute of Food and Agriculture Tribal Colleges Research Grant \(USDA-NIFA-TCRGP-004795\)](#) – Applications due February 20, 2015
- **NEW!** [DE-FOA-0001261: OPEN 2015](#) – Submission Deadlines: Notice of Intent Deadline: 2/20/2015 5:00 PM ET, Concept Paper Submission Deadline: 2/27/2015 5:00 PM ET, Full Application Submission Deadline: TBD
- **NEW!** [Thermal Transport Processed \(PD-14-1406\)](#) – Application due February 20, 2015 and October 20, 2015
- [Student Program for Environmental Excellence in Design \(SPEED\) \(EPA-OAR-OTAP-15-02\)](#) – Application Due Date: February 22, 2015
- **NEW!** [U.S. Department of Agriculture – Phase II \(USDA-NIFA-SBIR-004815\)](#) – Applications due February 26, 2015
- [The Resilient Electricity Delivery Infrastructure \(REDI\) Initiative \(DE-FOA-0001219\)](#) – Application Due Date: March 4, 2015
- **NEW!** [EPA-EE-14-02 - Environmental Education Local Grants Program](#) – Close Date: March 6, 2015
- [Physics of Reliability: Evaluating Design Insights for Component Technologies in Solar 2 \(PREDICTS2\)](#) – Close Date: 3/12/2015
- [Sustainable and Holistic Integration of Energy Storage and Solar PV \(SHINES\)](#) Close Date: 3/19/15
- [Desalination and Water Purification Research and Development \(DWPR\) \(R15AS00019\)](#) – Application Due Date: April 27, 2015
- [Desalination and Water Purification Research and Development \(DWPR\) Pilot \(R15AS00021\)](#) – Application Due Date: April 27, 2015
- [American Apprenticeship Initiative \(FOA-ETA-15-02\)](#) – Application Due Date: April 30, 2015
- **NEW!** [Flexible Hybrid Electronics Manufacturing Innovation Institute Grant \(BAA-RQKM-2015-0014\)](#) – Applications due May 29, 2015
- [Advanced Frontiers in Renewable Hydrogen Fuel Production via Solar Water Splitting Technologies](#) – Letter of Intent due October 7, 2015

- [Land and Water Conservation Fund State and Local Assistance Program](#) – Application Due Date: 08/11/2015
- [Landscape Design for Sustainable Bioenergy Systems \(DE-FOA-0001179\)](#) – Concept Paper due November 21, 2015
- [Repowering Assistance Program](#) - Ongoing
- [Rural Business Enterprise Grants](#) - Ongoing
- [Rural Business Opportunity Grants](#) – Ongoing
- **NEW!** [Sunshot Catalyst Prize](#) (DE-FOA-0001126) - Applications Accepted on a Continuous Basis - The U.S. Department of Energy SunShot Catalyst is an open innovation program that allows the public to rapidly create and develop products and solutions that address near-term challenges in the U.S. solar marketplace through prize challenges.
- [Sustainable Agriculture Research and Education Grants](#) - Ongoing
- [Renewable Energy RFP's - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power](#) – Various Deadlines
- [U.S. Dept. of Agriculture - Rural Development Grant Assistance](#)
- [Green Refinance Plus](#) – Ongoing
- [National Science Foundation Funding Opportunities](#)